

The judgment of the designer is, in every case, the most important point in the design of jigs and fixtures. Definite rules for all cases cannot be given. General principles can be studied, but the efficiency of the individual tool will depend entirely upon the judgment of the tool designer in applying the general principles of tool design to the case in hand.

When designing the jig or fixture, the locating and bearing points for the work and the location of the clamps must also be so selected that there is as little liability as possible of springing the piece or jig, or both, out of shape, when applying the clamps. The springing of either the one or the other part will cause incorrect results, as the work surfaces will be out of alignment with the holes drilled or the faces milled. The clamps or straps should therefore, as far as possible, be so placed that they are exactly opposite some bearing point or surface on the work.

Weight of Jigs. — The designer must use his judgment in regard to the amount of metal put into the jig or fixture. It is desirable to make these tools as light as possible, in order that they may be easily handled, be of smaller size, and cost less in regard to the amount of material used for their making, but, at the same time, it is poor economy to sacrifice any of the rigidity and stiffness of the tool, as this is one of the main considerations in obtaining efficient results. On large-sized jigs and fixtures, it is possible to core out the metal in a number of places, without decreasing, in the least, the strength of the jig itself. The corners of jigs and fixtures should always be well rounded, and all burrs and sharp edges filed off, so as to make them convenient and pleasant for handling. Smaller jigs should also be made with handles in proper places, so that they may be held in position while working, as in the case of drilling jigs, and also for convenience in moving the jig about.

Jigs Provided with Feet. — Ordinary drill jigs should always be provided with feet or legs on all sides which are opposite the holes for the bushings, so that the jig can be placed level on the table of the machine. These feet also greatly facilitate the making of the jig, making it easier to lay out and plane the different finished surfaces. On the sides of the jig where no feet are